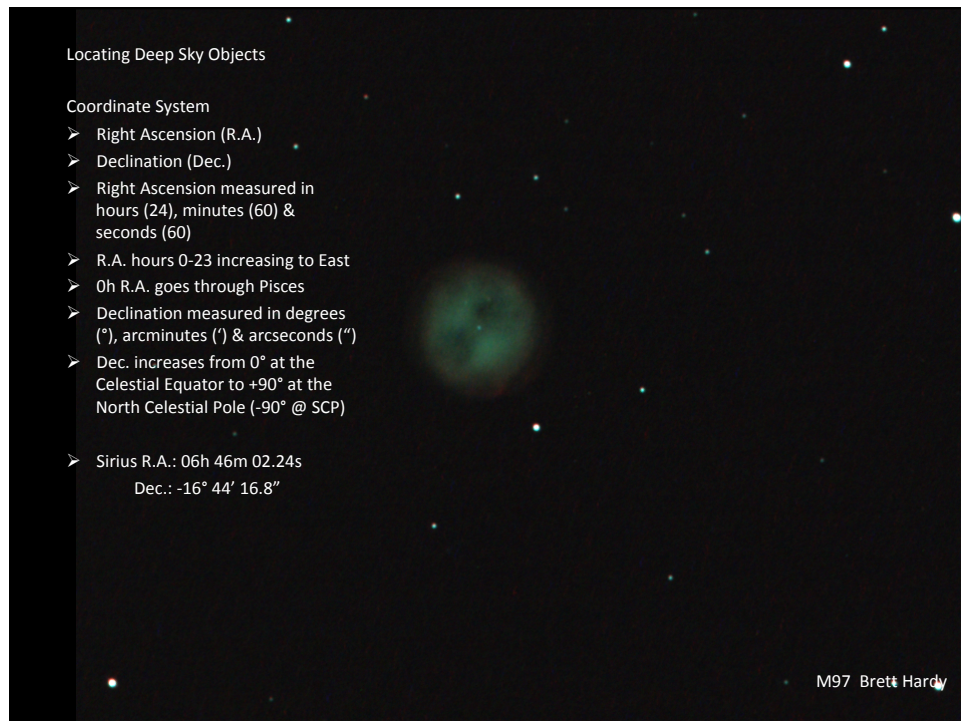


What Are Deep Sky Objects ?

- Beyond the Moon & Planets
- Within the Milky Way Galaxy
 - Double stars
 - Open clusters
 - Globular clusters
 - Planetary nebulae
 - Emission & reflection nebulae
 - Supernova remnants
 - Comets
 - Asteroids
- Outside the Milky Way Galaxy
 - Galaxies

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Object Catalogues

- New General Catalogue (NGC)
- Caldwell Catalogue (C)
- Index Catalogue (IC)
- RASC Finest NGC
- Arp Catalogue



Messier Catalogue

- 110 objects
 - 3 asterisms
 - 26 open clusters
 - 29 globular clusters
 - 4 planetary nebulae
 - 7 diffuse nebulae
 - 25 spiral galaxies
 - 3 barred spiral galaxies
 - 11 elliptical galaxies
 - 1 irregular galaxy
 - 1 supernova remnant



Asterisms

Spring
M40

Summer
M24

Fall
M73

Winter
None

Binoculars
M24, M40, M73



M24 Rick Stankiewicz

Open Clusters

Spring
M44, M67

Summer
M6, M7, M11, M16, M18, M21,
M23, M25, M26, M29, M39

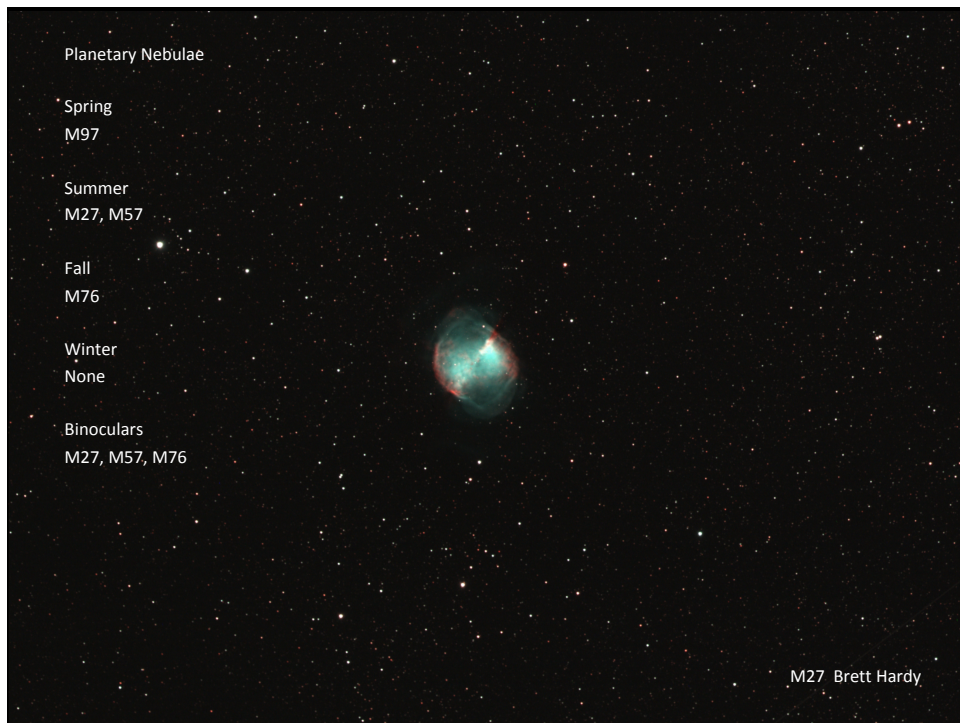
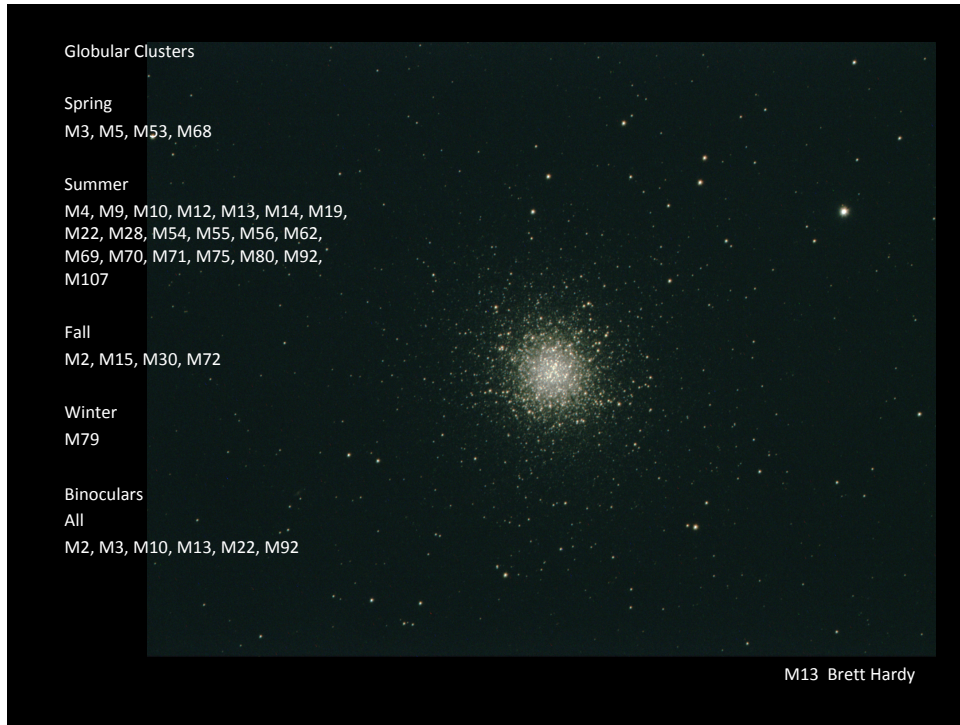
Fall
M34, M52, M103

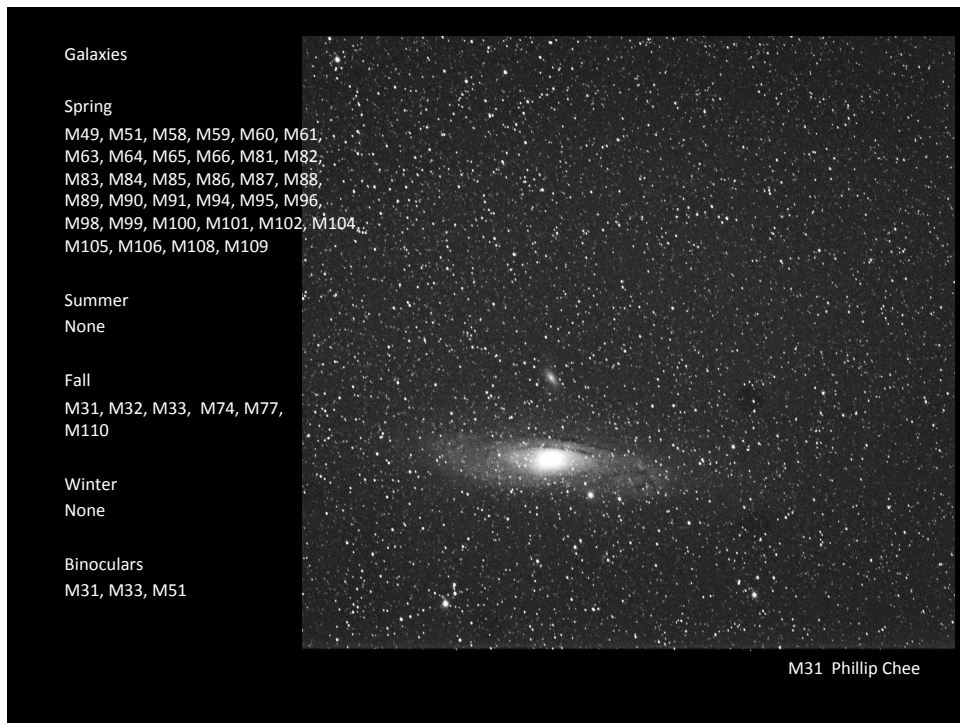
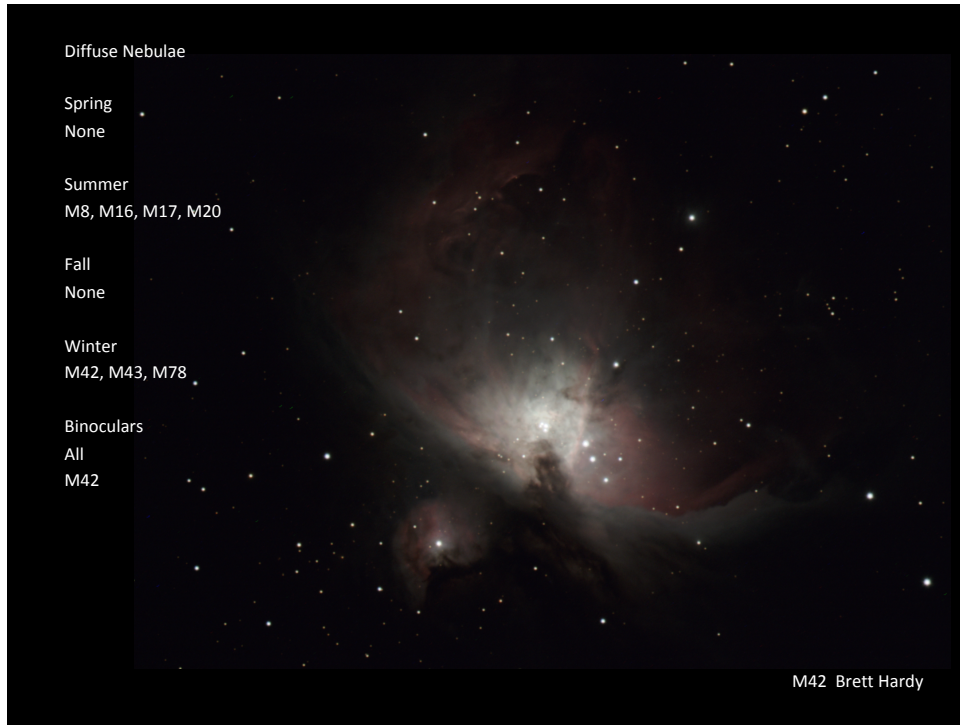
Winter
M35, M36, M37, M38, M41, M45,
M46, M47, M48, M50, M93

Binoculars
All
M45




M45 James Lee









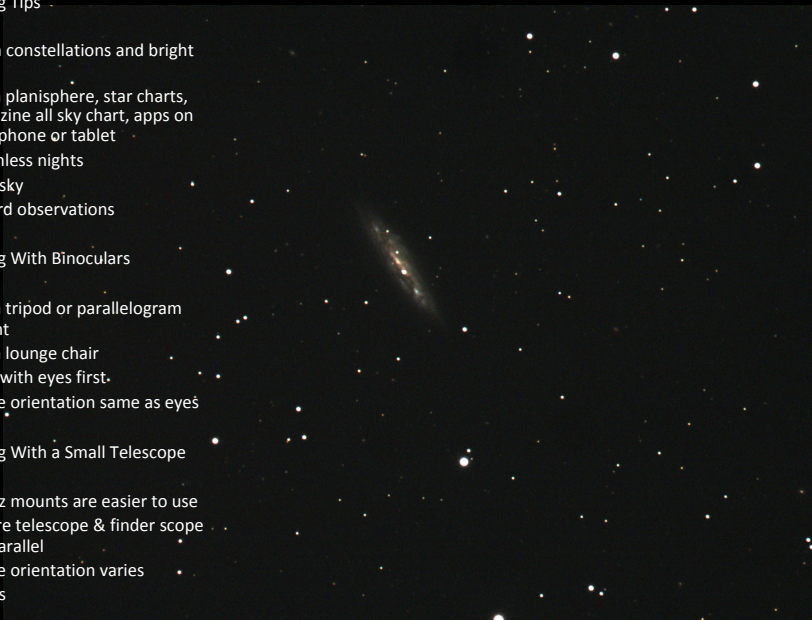
PAA Messier Certificates

Four different levels

- 30+ Messier Objects observed
- 60+ Messier Objects observed
- 90+ Messier Objects observed
- All 110 Messier Objects observed

- Certificates differentiated by acquisition method
- Contact Rick Stankiewicz or Sean Dunne

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Observing Tips

- Learn constellations and bright stars
- Use a planisphere, star charts, magazine all sky chart, apps on your phone or tablet
- Moonless nights
- Dark sky
- Record observations

Observing With Binoculars

- Use a tripod or parallelogram mount
- Use a lounge chair
- Look with eyes first
- Image orientation same as eyes

Observing With a Small Telescope

- Alt/Az mounts are easier to use
- Ensure telescope & finder scope are parallel
- Image orientation varies
- Filters

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Print Resources

- Sky Charts
 - Cambridge Star Atlas 2000 by Wil Tirion ISBN: 0-521-26322-0
 - Uranometria 2000 Volume 1 & 2 by Tirion, Rappaport, Lovr ISBN: 0-943396-14-X (v.1) 0-943396-15-8 (v.2)
 - Sky Atlas 2000 by Wil Tirion (large format) ISBN: 0-933346-33-6
- Magazines
 - SkyNews
 - Astronomy
 - Sky & Telescope
- Books
 - The Messier Objects by Stephen James O'Meara ISBN: 0-521-55332-6
 - Deep Sky Wonders by Sue French ISBN: 978-1-554007-793-9
 - Cosmic Challenge by Philip S. Harrington ISBN: 978-0-521-89936-9

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Software & Apps

- Stellarium
- Cartes du Ciel
- GoSkyWatch Plenatarium
- Sky Safari
- Starry Night
- Sky Tools 4

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Novice Astronomy Class # 11
Deep Sky Objects Part 2
February 3, 2023

